

A Rare Diagnostic Challenge: Epidermoid Cyst in the Floor of the Mouth

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ABSTRACT:

Swellings of the floor of the mouth pose diagnostic challenges owing to intricate regional anatomy, including salivary glands, ducts, muscles, and neurovascular structures. Lesions may arise from developmental, inflammatory, obstructive, cystic, or neoplastic causes, frequently mimicking each other clinically. We report a 24-year-old male with an incidental painless floor-of-mouth swelling. Examination revealed a well-defined, non-tender 3 × 2 cm mass under intact mucosa; ultrasound showed a 3.6 × 3.5 cm circumscribed cystic lesion with homogeneous echogenic material and hyperechoic foci. Differentials encompassed ranula, mucocoele, lipoma, dermoid cyst, and thyroglossal duct cyst. Imaging is pivotal for refining diagnosis and surgical planning. Complete intraoral excision confirmed an epidermoid cyst histologically. This case emphasizes considering both common and rare entities in floor-of-mouth swellings. Early diagnosis and timely intervention prevent complications like infection, airway obstruction, or functional impairment, ensuring optimal outcomes.

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INTRODUCTION:

Dermoid cysts are uncommon benign developmental lesions that arise from ectodermal elements entrapped during embryogenesis¹. They represent a small proportion of cystic lesions of the head and neck but are recognized as one of the characteristic developmental cysts occurring in the floor of the mouth². Histologically, these lesions are divided into epidermoid, dermoid (with dermal appendages like sebaceous glands, sweat glands, or hair follicles), and teratoid types¹.

Clinically, they present as slow-growing, painless swellings, often asymptomatic until interfering with speech, swallowing, or airway patency³. Presentation depends on mylohyoid relation: sublingual (superior)

or submental/submandibular (inferior)³. Differentials include ranula, thyroglossal duct cyst, and lymphangioma⁴. CT/MRI guides surgery⁶. Complete excision yields an excellent prognosis and low recurrence².

CASE REPORT:

A 24-year-old male presented to the Department of Oral and Maxillofacial Surgery with a 3-day history of intermittent, mild-to-moderate, non-radiating pain in the upper anterior tooth region. Incidentally, a left floor-of-mouth swelling, extending beyond the midline and noticed 2–3 months prior, was found. It had gradually enlarged without pain, discharge, dysphagia, or mastication issues. Medical and dental histories were unremarkable.

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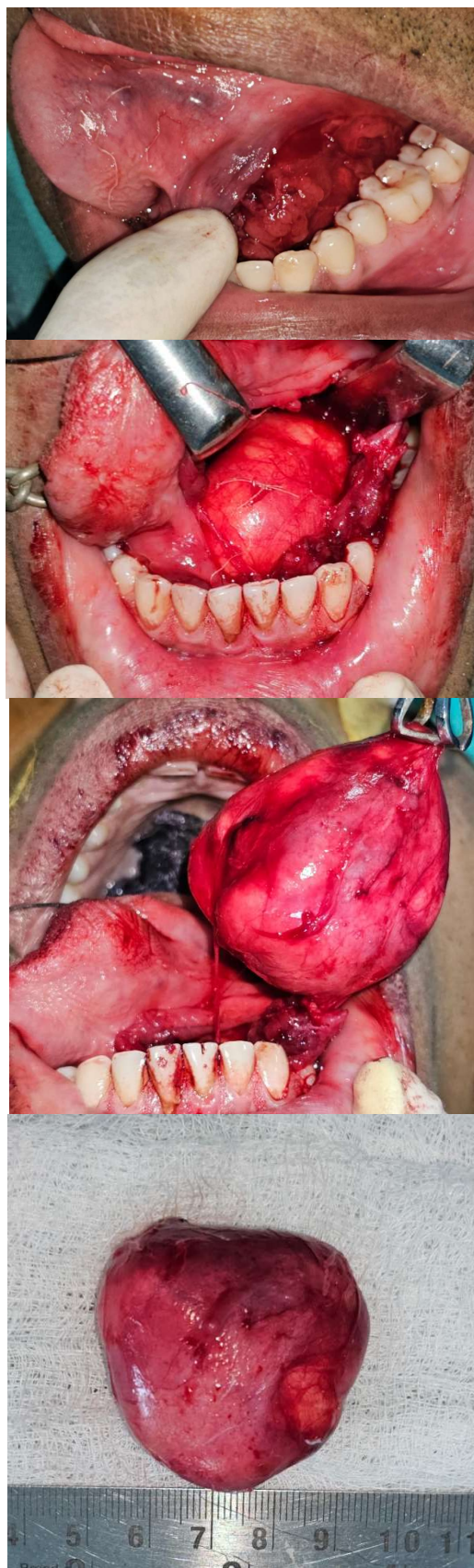
Extraorally, no facial asymmetry or cervical lymphadenopathy was noted; skin was normal. Intraorally, a 3 × 2 cm, well-defined, dome-shaped swelling occupied the left floor of the mouth, beyond midline. The mucosa was intact and non-ulcerated. Palpation revealed a non-tender, fluctuant, compressible lesion without discharge. Tongue protrusion was mildly restricted due to mass effect, but Wharton's ducts were patent with normal salivary flow. No infection signs were present.

Provisional diagnosis: ranula. Differentials: dermoid cyst, thyroglossal duct cyst, lymphatic malformation. Ultrasound showed a 3.6 × 3.5 cm well-defined cystic lesion in the left floor of the mouth with homogeneous echogenic content, no vascularity, and hyperechoic foci suggestive of a ranula or dermoid/epidermoid cyst, without muscular invasion.

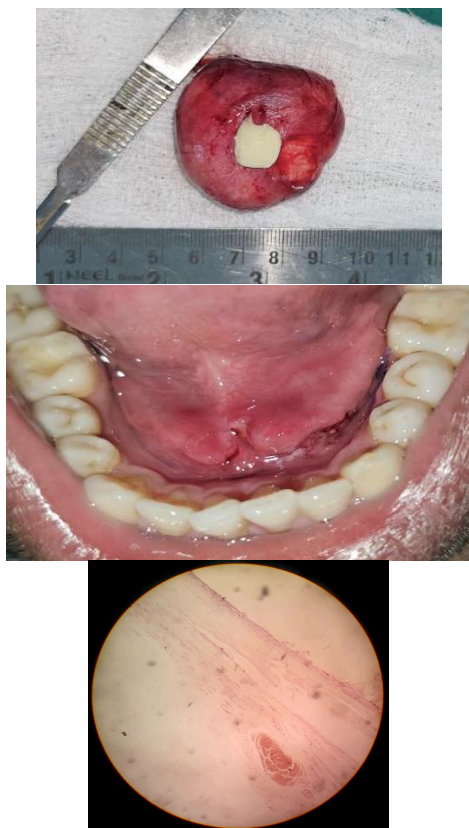
Under general anesthesia via nasotracheal intubation, intraoral excision was performed. A mucosal incision over the swelling preserved ductal margins. Meticulous sharp/blunt submucosal dissection avoided injury to Wharton's duct, lingual nerve, and sublingual gland. The 4 × 3 cm encapsulated cyst was enucleated intact, preventing rupture. Hemostasis, saline/betadine irrigation, and layered resorbable suture closure followed. The specimen, sent for histopathology, revealed a stratified squamous epithelium-lined cyst with keratin-like lumen content, scanty connective tissue, mild inflammation, collagen bundles, and engorged vessels.

Postoperatively uneventful; 6-month follow-up showed no recurrence, preserved tongue mobility, and salivary function.

Clinical Images:



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DISCUSSION:

Dermoid cysts of the floor of the mouth are uncommon developmental lesions, with the sublingual region as the most frequent intraoral site². Typically diagnosed in the second or third decades, they present as painless, midline swellings that enlarge gradually³. This aligns with our 24-year-old patient's profile, though cases span wide ages, including a 69-year-old reported by Parara et al.⁵. Literature, such as Oluleke et al.'s review of 14 sublingual cases, notes male predominance in young adults and neonates, with indolent growth causing functional issues only upon significant enlargement⁴.

Presentation hinges on mylohyoid relation: supra-mylohyoid lesions cause sublingual elevation; infra-mylohyoid ones yield submental "double-chin" masses³. Atypical lateral variants may mimic sialadenitis or obstructions, as in Graham et al.^{7,8}

Imaging (CT/MRI) confirms cystic nature and anatomy, aiding surgery, per Giarraputo et al.⁶ Our ultrasound showed a well-circumscribed sublingual lesion without invasion.

Intraoral excision is suitable for supra-mylohyoid cysts, minimizing scarring, while extraoral approaches

are appropriate for larger or inferior cysts.¹¹ We used this for safe enucleation, preserving vital structures.

Histopathology distinguishes types per Meyer: epidermoid (squamous lining), dermoid (with adnexa like sebaceous glands), and teratoid¹. Ours confirmed epidermoid features a keratin-filled, squamous-lined cyst with inflammation.

Complete excision yields low recurrence and favorable outcomes.^{2,4} Our patient's uneventful recovery and 6-month recurrence-free follow-up corroborate this. Malignant change is rare orally.⁹

This case underscores typical presentation, diagnostic imaging's role, and excellent prognosis with precise surgery.

CONCLUSION:

Although uncommon, dermoid cysts must feature in differentials for painless sublingual swellings. A thorough clinical exam and imaging to assess the mylohyoid relation guide optimal surgery. Intraoral excision for supra-mylohyoid lesions yields excellent functional/cosmetic outcomes. Histopathology confirms diagnosis; early intervention prevents infection, airway issues, and functional decline.

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